



1, *Gracilinenia flicostulata* Lubomirski. 2, *G. aequistriata* Weyrauch, type. 3, *Nenia (Columbinia) zischkai* Weyrauch, type. 4, 5, 6, *Mucronalia nidorum* Pilsbry, shells. 7, 8, nests in sea urchin spines. 9, operculum.

So far as I know, this interesting snail has not been noticed before. A description of the shell follows. The generic reference is not certain.

MUCRONALIA NIDORUM, new species. Plate 6, figs. 4, 5, 6.

The rather thin white shell is imperforate, lanceolate, smooth and glossy. The upper part (about a fourth of the length) is somewhat attenuate and slightly curved. The minute apex is erect with rounded tip. Several following whorls are only weakly convex, with superficial suture. The aperture is contained about $2\frac{2}{3}$ times in the length; the peristome with regularly semicircular outer and basal margin; the inner margin concave. Columella thickened.

The operculum is very thin, long ovate, showing some faint lines indicating former stages of growth; the nucleus is apparently near the base on the columellar margin, but not distinctly indicated (Pl. 6, fig. 9).

No radula could be found.

Length 3.7 mm., diameter 1.7 mm.; $9\frac{1}{2}$ whorls.

The type and figured paratypes are no. 196745 ANSP., from "Triton" (A. R. Thompson's yacht) station 821, off Palm Beach, Florida, in 25 fms. Other paratypes in McGinty collection.

The amount of curvature of the upper part of spire apparent depends of course upon the position of the shell, but there seems to be a little individual variation in this feature, curvature being scarcely noticeable in some examples, more distinct in others.

The author is deeply indebted to the McGinty brothers for opportunity to examine this interesting mollusk, and to Axel A. Olsson for excellent photographs (Figs. 4-6) of difficult subjects. Thanks are also offered to Miss Elizabeth Deichmann of the M. C. Z. for identification of the sea urchin.

TWO NEW SPECIES OF CLAUSILIIDAE FROM PERU AND BOLIVIA

By DR. WOLFGANG WEYRAUCH

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GRACILINENIA AEQUISTRIATA, new species. Plate 6, fig. 2.

Diagnosis: A species of the genus *Gracilinenia*, characterized by its considerable length, equally spaced striation and flattened whorls.

Description of type: The shell is entire, very thin, extremely slenderly fusiform-turritid. Color uniform light, somewhat reddish brown, whitish frosted by the sculpture of the surface. The apex globular. Second embryonic whorl decidedly convex, wider than the first and 3d whorl. Third to seventh whorls slowly diminishing in convexity; later whorls very slightly convex, nearly flat. From the 3d to the largest, third from last whorl steadily and slowly increasing in width. The last whorl with straight lateral outlines, flattened on the upper half of the back, strongly descending and widely built forward to the aperture. The surface matt, with sculpture of thin lamella-like raised riblets, mostly whitish, in places light brown, slightly oblique, continuous and very shortly curved to the right at the upper end, where they are falling into the furrow of the deeply impressed suture. The riblets are regularly spaced, on the face of the last and penult whorl 8 in 1 mm., on the earlier whorls slightly more spaced, on the face of the seventh whorl 5 to 6 in 1 mm. The aperture is funnel-shaped, slightly longer than wide, evenly rounded, except for the left side, which is somewhat straightened. The peristome is broadly expanded, slightly thickened. The upper margin of the peristome is white, like the adjacent part of the aperture; its outer and basal margins are yellowish brown, like the adjacent interior of the aperture. The superior lamella is white, high, emerging to the lip edge, not surpassing the plane of aperture, rather thick, slightly oblique towards the concave left side; it slowly diminishes within and is continuous with the spiral lamella. The inferior lamella is white, very low, but shortly visible in front view of the aperture; its lower end rapidly converging towards the superior lamella; its upper half parallel and very close to the spiral lamella. The subcolumellar lamella is largely visible in oblique view in the aperture and is widely separated from the lower end of the lunella. The principal plica is low, white on the upper rim, light brown on the sides, parallel to the suture, half a whorl long and surpassing slightly the upper end of the lunella. The lunella is developed merely as a very low, whitish, callous ridge, short, slightly and evenly curved. The clausilium occupies the whole space between lunella and subcolumellaris, is wide at the middle of the spatula, and its end pointed.

Notes on paratypes: 24 specimens with the same data as the type. All characters rather constant, except the following: 13 specimens decollate and 11 entire. Color varying from light reddish to yellowish brown. In the latter specimens the interior of the aperture is very light brown and the peristome entirely white. The lunella is shortly or widely separated from the subcolumellaris or continuous with that. Accordingly the

end of the clausilium is more or less pointed or more or less broadly rounded. The following measurements are in mm.

Alt.	Diam.	Alt. apert.	Lat. apert.	Whorls	Type
30,4	3,5	3,8	3,6	18	entire, Type
30,5	3,5	3,9	3,8	16½	entire
29,7	4,0	3,7	3,5	17¼	entire
29,6	3,8	3,6	3,4	17½	entire
26,8	3,8	4,3	3,6	11¼	decollate
24,2	3,6	4,0	3,7	11½	decollate
22,3	3,2	3,8	3,2	9½	decollate
21,7	3,5	3,6	3,5	9½	decollate

Type locality: Peru: Valle de Chanchamayo, on the highway from Hacienda Naranjal near the village San Ramón to the mine "Pichita-Caluga"; elevation not measured, but probably at about 1300 m. Collected by the author.

Material: Type WW 1531 and 11 paratypes in the author's collection; 2 paratypes in the Senckenberg Museum, Frankfurt a.M.; 2 paratypes in the Academy of Natural Sciences of Philadelphia; 2 paratypes in the Museum of Comparative Zoology, Cambridge, Mass.; 2 paratypes in the Chicago Natural History Museum; 3 paratypes in the collection of Dr. F. E. Loosjes, Wageningen, Netherlands; 2 paratypes in the collection of Prof. Dr. W. Blume, Göttingen.

Comparisons: Closely related to *Gracilinenia flicostulata* Lubomirski, which is figured for comparison (Plate 6, fig. 1), but mainly different by equal spaced striation and strikingly flattened whorls. Secondary differences: shell higher, somewhat wider, several whorls more, color darker, more solid, either decollate or entire in completely adult specimens, whereas *flicostulata* is always decollate in adult state.

Ecology: The 25 specimens were collected in 5 minutes on the bare face of an isolated limestone block, about 2 m. high and 3 m. wide, in a clearing of the tumid and high arboreal vegetation of the subtropical rainforest. The block was protected against direct sunlight by some high brushes and young large-leaved trees of *Ochroma* spec. Strewn around the big block were smaller limestones of varying sizes, on which no specimen could be detected. The black animals were met on a cloudy, though not rainy day, at 3 p.m. crawling upward on the vertical planes of the rock, which were covered with a sheet of green, unicellular *Chlorella*-like algae. The shells were partly covered with the same algae. The excrements, deposited by the animals, were of uniform light

green color in all specimens. A microscopical study revealed merely the destroyed remains of algae and no trace of fibers of higher plants. 16 specimens of *Peruina peruana slosarskii* (Lubomirski) were found crawling around on the same limestone block, not only on its vertical surfaces, but also on top of the rock, covered with a thick layer of rotting leaves.

NENIA (COLUMBINIA) ZISCHKAI, new species. Plate 6, figures 3, 3a.

Diagnosis: A species of the subgenus *Columbinia*, characterized by its considerable size, almost cylindric shape and sculpture of strong, evenly spaced and strongly slanting riblets.

Description of type: The shell is entire, sinistral, rather solid, elongate cylindric-fusiform, widest at the two penult whorls. The color is uniform cinnamon-brown, except for a very thin, whitish band below the suture. Apparently collected shortly after death, and therefore with a thin layer of a brownish white, calcareous overwash, filling partly the interspaces of the riblets and the interior of aperture. The apex obtuse and very large. First three postembryonal whorls very weakly convex; later whorls nearly flat; the last whorl much elongated, becoming free and produced to the aperture. Suture moderately impressed, very regularly obtusely denticulate by the riblets, which are somewhat thickened and projecting at the upper end. Surface matt, and after 2 embryonic whorls, whose sculpture is corroded by weathering; it has a rough sculpture of strong, low, rounded riblets, continuous between the suture, somewhat narrower than their intervals, strongly oblique, more so on the last three whorls, where they form an angle of 45 degrees with the suture. There are 3 riblets in 1 mm. on the two penult whorls and 42 riblets crossing the periphery of the penult whorl. On the last whorl, the riblets become lower, more crowded; behind the peristome they are still narrower, more wavy and frequently interrupted. The principal plica and lunella are marked in their whole course on the outside of the last whorl by a deep and very thin incision, just as though cut with the point of a sharp knife and interrupting the riblets. Aperture completely free, evenly rounded, broadly ovate, somewhat pear-shaped. Plane of aperture somewhat oblique, convex in profile and evenly concave in the direction of the shell axis. Interior of aperture light rose-brown, fading to a dirty ivory-white on the upper and right side of the peristome, whose left and inferior half is colored like the interior of the aperture. Peristome thickened, strongly expanded throughout and well reflected. Superior lamella not protruding above the peristome, thick, highly raised, emerging to the lip edge, earlike, very

deeply concave on the left side, continuous with the lower spiral lamella, forming with this a slightly S-shaped curve. The inferior lamella is of light rose-brown color, low, but shortly visible in front view, not reaching the edge of the peristome, considerably thickened on the upper rim, channel-like arching over to the junction of superior lamella and the spiralis. Subcolumellar lamella short, deeply immersed, but shortly visible in very oblique view in the aperture, terminating widely separated from the lower end of the lunella. Principal plica white, high, thin, dorso-lateral, half a whorl long, slightly surpassing the upper end of lunella and shortly separated from that. The lunella is dorso-lateral, well developed as a low and wide ridge, weakly and evenly arched, brownish-rose colored and darker than the surrounding inside of the shell. The clausilium is strongly curved lengthwise and transversely, evenly rounded at the end, close to the subcolumellar lamella, but slightly separated from the lunella.

Notes on paratype: One specimen, same locality as the type, partly bleached, somewhat damaged, has the earlier whorls more slowly tapering and the whitish band below the suture a little broader. In all other features, this paratype corresponds perfectly with the type.

Measurements are in mm.:

Alt.	Diam.	Alt. apert.	Lat. apert.	Whorls	
34,8	6,2	6,9	5,8	8 $\frac{3}{4}$	Type
32,0	5,8	6,6	5,4	8 $\frac{3}{4}$	

Type locality: Eastern Bolivia: Yungas de Palmar, 700 m., tropical rain forest. Collected by Mr. Rudolf Zischka, after whom this new species is named.

Material: Type WW 1368 in the author's collection; 1 paratype in the Academy of Natural Sciences of Philadelphia.

Comparisons: *C. zischkai* can only be compared with the group of *C. bartletti* Adams (= *obesa* Haas), comprising *reyrei* Jousseaume, *huancabambensis* Rolle, *juninensis* M. Smith and *binkiae* Pilsbry, all described from the subtropical and tropical forest of Ecuador and eastern Peru, and all at hand except *reyrei*. Our novelty is nearest to *binkiae* from south eastern Peru, which has (1) the same evenly spaced, strong, low and rounded riblets, (2) the same regularly and obtusely denticulate suture, and (3) the same very obtuse apex. But *zischkai* is twice as high as *binkiae*, is decidedly less fusiform, has the riblets more oblique on the last three whorls and its inferior lamella is

channel-like arched towards the superior lamella and spiralis, not plain as in *binkiae*. For its height, *zischkai* is nearest to *juninensis* of 30 mm. length, but this is (1) attenuate above, (2) has the suture irregularly crenulate and (3) its riblets are finer, more crowded, often interrupted, often changing the direction and less slanting. Only *bartletti* (= *obesa*) has a slightly arched inferior lamella; but *zischkai* differs from that by greater length, straightened outlines, and the sculpture of surface, which is in *obesa* intermediate between *binkiae* and *juninensis*.

I consider the above mentioned species of the group of *C. bartletti* only subspecifically distinct, in the sense of geographical races. But I regard *zischkai* specifically different for the following characters: (1) shell less ventricose; (2) height of last whorl in front view, including expansion of peristome, contained $2\frac{1}{2}$ times in altitude of shell, whereas in *bartletti* and its races this proportion is 1:2.

TWO NEW SUBSPECIES OF NEPTUNEA DECEMCOSTATA

By ARTHUR HADDLETON CLARKE, JR. *

In 1953, an extensive collection of deep water marine mollusks was presented to the Department of Mollusks of the Museum of Comparative Zoology by Mr. W. C. Schroeder, Associate Curator of Fishes at that institution. The specimens had been obtained during a faunal survey of the continental slope area of northeastern North America conducted by the Woods Hole Oceanographic Institution in 1952 and 1953. Operations were under the direction of Mr. Schroeder, and the trawler *Cap'n Bill II* had been used for the survey. A report on these mollusks has been published (Clarke, 1954).

From the material collected, apparently considerable variation in shell form existed between lots of *Neptunea decemcostata* Say. All the western Atlantic specimens of *Neptunea* in the Museum of Comparative Zoölogy and the United States National Museum were examined and measured, and many Eastern Atlantic specimens were studied also. The existence of two mor-

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